

Matus, Tim A.

S/N: 10/605,038

REMARKS

Claims 1-22 are pending in the present application. In the Office Action mailed October 6, 2004, the Examiner rejected claims 1-22 under 35 U.S.C. §103(a) as being unpatentable over either Schneider et al. (USP 6,194,682) or Picard et al. (USP 6,359,251), in view of Brunner et al. (USP 6,570,132).

By citing Schneider et al. and Picard et al. as alternative and duplicative bases for rejection, the Examiner has contravened 37 CFR §1.104(c), MPEP §706.2, and MPEP §904.03. An Examiner is bound by 37 CFR 1.104(c) to base rejections on the “best” available prior art. Expounding upon this, MPEP §904.03 states that “[m]ultiplying references, any one of which is as good as, but no better than, the others, adds to the burden and cost of prosecution and should therefore be avoided.... The best reference should always be the one used”. (Emphasis added) Schneider et al. and Picard et al. are cited alternatively by Examiner to support the same proposition and add no mutually exclusive, relevant points. Accordingly, Applicant respectfully believes that Examiner’s rejection of claims 1-22 is improper and therefore should a Notice of Allowance not be forthcoming, Applicant requests clarification for purposes of appeal.

Nevertheless, Applicant believes that the system and method of providing feedback from a plasma torch of the present invention is patentably distinct from both Schneider et al. and Picard et al., even in view of Brunner et al. First, the Examiner admitted that Schneider et al. and Picard et al. do not “set forth use of serialization data from the torch over a single communication link to a remote controller.” As will be set forth, Brunner et al. does not either. Additionally, although the Examiner cited Schneider et al. and Picard et al. as teaching “sensors” in a plasma torch, Schneider et al. and Picard et al. do not actually teach or suggest the use of “sensors” that are disposed in a plasma torch.

The Examiner’s statement that “[b]oth Schneider et al. and Picard et al. teach plasma torch cutting systems having torch sensors and torch head components communicating with a remote controller” is incorrect. The Examiner did not cite to any specific language of Schneider et al. to support such a contention. In fact, Schneider et al. does not even use the words “sense” or “sensor.” Schneider et al. does refer to feedback in Column 4, lines 48-64, however, it says nothing about the location of the sensors. All that one may draw from this feedback reference is that there are leads that carry signals from one location to another. Those signals may represent voltage, current, power, other functions, trigger signals, user selectable parameters, etc, but those signals may be “sensed” at sensors located remotely. There is no disclosure for a “sensor” disposed in a plasma torch, let alone a plurality of sensors.

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Likewise, Picard et al. also does not teach or suggest that "sensors" are disposed in the torch. Picard et al. teaches only a sensor disposed at the orifice 83 of the second shield gas manifold 71 in the APC 16 and a voltage feedback card 52 disposed in the power supply 14, but is silent as to any "sensors" in the torch. See Col. 11, Ins. 25-30; Col. 15, Ins. 1-10. Both the second shield gas manifold 71 of the APC 16 and the power supply 14 are shown as separate bodies from the torch. See Figs. 9, 13. In fact, as indicated by the arrows and the un-numbered boxes labeled "Plasma Gas Input to Torch" and "To Torch Shield Cap" in Fig. 9, one would be led to believe that there are no such "sensors" in the torch of Picard et al. At best, Picard et al. merely suggests feedback signals, similarly as Schneider et al. That is, as depicted in Fig. 13, merely a "contact sense wire" is located in the torch 24. One skilled in the art would readily understand that the "sensing" takes place in the Voltage Feedback Card 52 – that is the "sensor." Regardless of whether the sensor at orifice 83 and/or the voltage feedback card 52 constitute "sensors" as called for in the claims, neither reference teaches or suggests sensors disposed in a plasma torch.

The claimed invention includes sensors disposed within the torch of a plasma-cutting or similar system. Claim 11 calls for a method comprising the steps of "receiving feedback from a plurality of sensors disposed in a plasma torch." Claim 15 calls for a plasma torch assembly including "a plurality of sensors disposed within the torch body." Claim 19 recites a method of manufacturing a plasma torch including the step of "disposing a plurality of sensors within the housing [of the plasma cutting torch]." As such, Schneider et al. and Picard et al. do not satisfy each and every limitation of the claims of the present invention since they do not include sensors disposed in a plasma torch.

The Examiner admitted that neither Schneider et al. nor Picard et al. "set forth use of serialization of the data from the torch over a single communication link to a remote controller." In an attempt to overcome the acknowledged shortcoming of Schneider et al. and Picard et al., the Examiner cited Brunner et al. as teaching that the use of serialization is conventional and "lead[s] to efficient remote control of a torch and the powering of the same."

First, Brunner et al. is directed to a welder, not a plasma torch. The welder of Brunner et al. and the plasma torches of Picard et al. and Schneider et al. are fundamentally different apparatus. The Examiner did not proffer any reason why these references should be combined, or how. "It is the duty of the examiner to explain why the combination of the teachings is proper." MPEP §2142; Ex parte Skinner, 2 USPQ2d 1788 (Bd. Pat. App. & Inter. 1986). One of ordinary

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skill in the art would recognize that plasma cutting and welding, in the context of this invention, are distinct fields of invention and not readily combinable.

Furthermore, and most notably, Brunner et al. is irrelevant to the present set of claims as it clearly does not teach or suggest that the communication means is in the torch. Brunner et al. sends signals between the welding unit and the remote unit – never to and/or from the torch. Claims 1, 11, 15, and 19 all expressly state that feedback signals are transmitted between the plasma torch and a power supply or other unit remote from the torch. The communication system of Brunner et al. is configured for sending signals between the remote unit 23 and the welding unit 1. See Col. 9, lns. 23-27. Accordingly, the serialization circuit of Brunner et al., composed of logic unit 41 and switching component 39, is disposed in the remote unit and not in the torch. See, Fig. 2 and Col. 9, lns. 23-45. Therefore, the torch is not configured to receive data from sensors disposed within the torch and then serialize the data for transfer to another unit. That is, Brunner et al. has no serial communication at all in the torch and therefore actually teaches away from the present invention since the serialized communication of Brunner et al. is merely between a remote device and a power source. Brunner et al.'s torch is not included in the serial communication.

Claim 1 has been amended to broaden the claim and eliminate any misinterpretation that the communication is directional limited. Accordingly, the claim was not amended for any reasons related to patentability.

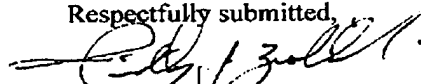
Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-22.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

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P.O. ADDRESS:
Ziolkowski Patent Solutions Group, LLC
14135 North Cedarburg Road
Mequon, WI 53097-1416 262-376-5170

Respectfully submitted,



Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial 262-376-5139
tjz@zpspatents.com